FlyBy Math™ Alignment   **Texas Essential Knowledge and Skills (TEKS) for Mathematics**   **§111.32 Algebra I**

b. Foundations for Functions

(1) The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways.

Knowledge and Skills and Performance Descriptions	*FlyBy Math*™ Activities
(B) The student gathers and records data, or uses data sets, to determine functional (systematic) relationships between quantities.	--Conduct simulation and measurement for several aircraft conflict problems. --Use calculations and experimental evidence to predict, describe, and explain several aircraft conflict problems.
(D) The student represents relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities.	--Represent distance, speed, and time relationship for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.

(2) The student uses the properties and attributes of functions.

Knowledge and Skills and Performance Descriptions	*FlyBy Math*™ Activities
(C) The student interprets situations in terms of given graphs or creates situations that fit given graphs.	--Use tables, bar graphs, line graphs, equations, and a Cartesian coordinate system to draw conclusions.
(D) In solving problems, the student collects and organizes data, makes and interprets scatterplots, and models, predicts, and makes decisions and critical judgments.	--Conduct simulation and measurement for several aircraft conflict problems. --Use calculations and experimental evidence to predict, describe, and explain several aircraft conflict problems. --Apply mathematics to predict and analyze aircraft conflicts and validate through experimentation.

(c) Linear functions

(1) The student understands that linear functions can be represented in different ways and translates among their various representations.

Knowledge and Skills and Performance Descriptions	*FlyBy Math*™ Activities
(C) The student translates among and uses algebraic, tabular, graphical, or verbal descriptions of linear functions.	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

(2) The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.	
Knowledge and Skills and Performance Descriptions (A) The student develops the concept of slope as rate of change and determines slopes from graphs, tables, and algebraic representations.	***FlyBy Math*^{TM} Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.
(B) The student interprets the meaning of slope and intercepts in situations using data, symbolic representations, or graphs.	--Interpret the slope of a line in the context of a distance-rate-time problem.
(F) The student interprets and predicts the effects of changing slope and y-intercept in applied situations.	--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Interpret the slope of a line in the context of a distance-rate-time problem.
(G) The student relates direct variation to linear functions and solves problems involving proportional change.	--Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Compare airspace scenarios for both the same and different starting conditions and the same and different rates.
(3) The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.	
Knowledge and Skills and Performance Descriptions (A) The student analyzes situations involving linear functions and formulates linear equations or inequalities to solve problems.	***FlyBy Math*^{TM} Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system. --Use tables, graphs, and equations to solve aircraft conflict problems.
(4) The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.	
Knowledge and Skills and Performance Descriptions (A) The student analyzes situations and formulates systems of linear equations to solve problems.	***FlyBy Math*^{TM} Activities** --Represent distance, speed, and time relationship for constant speed cases using linear equations and a Cartesian coordinate system.
(B) The student solves systems of linear equations using concrete models, graphs, tables, and algebraic methods.	--Use tables, graphs, and equations to solve aircraft conflict problems.